

## Forest Birds



Photo: DOFAW

# Hawai'i 'ākepa

*Loxops coccineus coccineus*

### SPECIES STATUS:

Federally Listed as Endangered

State Listed as Endangered

State Recognized as Endemic

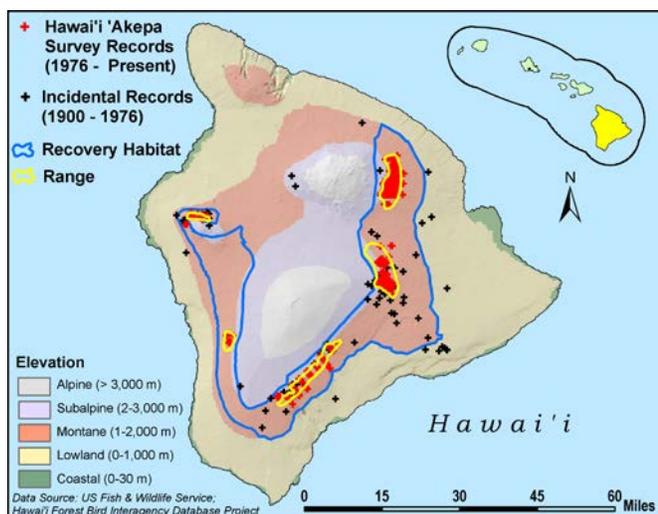
NatureServe Heritage Rank G1 – Critically Imperiled

IUCN Red List Ranking – Endangered

Revised Recovery Plan for Hawaiian Forest Birds – USFWS 2006

**SPECIES INFORMATION:** The Hawai'i 'ākepa is a small, insectivorous Hawaiian honeycreeper (Family: Fringillidae) endemic to the island of Hawai'i. 'Ākepa also are known from Maui (*L. c. ochraceus*) and O'ahu (*L. c. rufus*); both of which are likely extinct. Currently, all 'ākepa are considered one species, although they are recognized as critically imperiled at the subspecies level. After three years, males obtain their bright orange adult plumage; subadult plumage is dull brownish orange, although individual variation is high. Females are grayish-green with a yellow breast band. The lower mandible of the 'ākepa is slightly bent to one side which results in the mandible tips being offset; a characteristic shared with the 'ākeke'e (*L. caeruleirostris*). The bend can be to the left or right, and depending on the direction of the bend, individuals also possess an accompanying leg asymmetry; the leg opposite the curve in the mandible is slightly longer than the other leg. Together, these adaptations likely improve the species foraging efficiency. They often join mixed-species foraging flocks, particularly those with Hawai'i creepers (*Oreomystis mana*). They feed mainly on 'ōhi'a (*Metrosideros polymorpha*) leaf clusters, but also on koa (*Acacia koa*) leaves and seed pods, where it uses its bill to pry open leaf and flower buds in search of small arthropods. 'Ākepa are obligate cavity nesters, with most nests placed in natural cavities found in old-growth 'ōhi'a and koa trees. Females build nests, incubate eggs, and brood nestlings, and males deliver food to the female on and off the nest. Both parents feed the young, which remain with their parents for two to three months after fledging.

**DISTRIBUTION:** Occurs in five disjunct populations above 1,300 meters (4,300 feet) elevation on the windward side of the island of Hawai'i. Original range likely included all forested regions of the island.



**ABUNDANCE:** The Hawaiian Forest Bird Survey (1976-79, 1983), estimated the population at  $14,000 \pm 2500$  (95% confidence interval) birds. The south Kona and Hualālai populations were estimated at  $660 \pm 250$  birds and are apparently declining.

**LOCATION AND CONDITION OF KEY HABITAT:** Occurs in 'ōhi'a and 'ōhi'a/koa forests above 1,300 meters (4,300 feet). Density appears to be related to the number of available cavities, and because cavities primarily occur in older, large trees, old-growth forests may be preferred. The highest density of 'ākepa occurs in the Pua 'Ākala tract of Hakalau Forest National Wildlife Refuge, which has numerous large trees but a degraded understory. Many areas occupied by the species have been degraded by feral ungulates. Most of the current range of the Hawai'i 'ākepa is managed by State and Federal agencies or private conservation partnerships.

**THREATS:**

- Habitat degradation and loss. Logging and ranching has fragmented and reduced the amount of suitable habitat. Breeding density may be limited by nest-site availability and current levels of food availability may limit populations. In forest fragments, the large trees required for nesting may be more susceptible to windfall and desiccation. The slow growth rate of 'ōhi'a complicates management for 'ākepa. In addition, habitat fragmentation may prevent or restrict natural re-colonization of former range.
- Disease. The Hawai'i 'ākepa is not found below 1,300 meters (4,300 feet), which suggests that it is particularly susceptible to mosquito-borne diseases.
- Predation. Cavity nests may be vulnerable to rat predation, although nest success is high at Pua 'Ākala in the Hakalau Forest NWR, where rat densities are high.

**CONSERVATION ACTIONS:** Completed or ongoing actions specific to the Hawai'i 'ākepa include: demographic and reproductive studies have determined the importance of old-growth trees for nesting and that the species will use artificial cavities for nesting, and captive propagation techniques have been developed. In addition, Hawai'i 'ākepa likely benefit from management activities to conserve other endangered forest birds in Hakalau Forest National Wildlife Refuge, the Kona unit of the Hakalau Forest National Wildlife Refuge, 'Ōla'a/Kīlauea Watershed Partnership, Kapāpala Forest Reserve, and Pu'u Wa'awa'a Wilderness Sanctuary. These efforts include fencing, ungulate and small mammal control, forest restoration, habitat monitoring, and studies of disease and disease vectors. In addition to these efforts, future management specific to the Hawai'i 'ākepa may include the following:

- Aerially broadcast rodenticides to increase nestling and adult female survival.
- Conduct public education and outreach.
- Continue protection and management of wildlife sanctuaries and refuges.

**MONITORING:** Continue forest bird surveys and habitat monitoring.

**RESEARCH PRIORITIES:** Research priorities for most Hawaiian forest birds include improving methods for controlling rats and feral cats in native forests, determining ecological requirements of *Culex* mosquitoes at mid- and high-elevation forests, and developing methods to control mosquito populations. Research priorities specific to the Hawai'i 'ākepa include:

- Continue studies designed to refine the suitability of artificial cavities and evaluate their potential to facilitate the establishment of new populations.
- Determine the factors affecting the growth form of regenerating 'ōhi'a and potential methods for protecting old-growth trees from wind and desiccation.

- Identify disease-resistant individuals. Determining if genetic markers or genotypes are associated with resistance would allow targeted translocations of individuals possessing this genotype into populations lacking disease resistance.

**References:**

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